TRANE®

Installation Operation Diagnostics

Belt Driven Blower Coil Air Handler BDH(V)B

Models

BDH/V B 048
BDH/V B 065
BDH/V B 080

BCXB-SVX02A-E4

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Performance Data

Foreword

These instructions do not attempt to cover all variations in systems, nor to provide for every possible contingency to be met in connection with installation. Should further information be desired or should particular problems arise which are not sufficiently covered for the purchaser's purpose, the matter should be referred to the manufacturer.

Warranty

Warranty is based on the general terms and conditions of The Trane Company. The warranty is void if the equipment is repaired or modified without the written approval of the manufacturer, if the operating limits are exceeded or if the control system or the electrical wiring is modified. Damage due to misuse, lack of maintenance or failure to comply with the manufacturer's instructions or recommendations are not covered by the warranty obligation.

Reception

On arrival, inspect the unit before signing the delivery note. Specify any damage on the delivery note, and send a registered letter of protest to the last carrier of the goods within 72 hours of delivery. Notify the local Trane Sales Office at the same time.

The unit should be totally inspected within 15 days of delivery. If any concealed damage is discovered, stop unpacking the shipment.

Notify the carrier immediately by phone and registered mail. Notify the local Trane Sales Office. Concealed damage must be reported within 15 days of delivery. Check the unit nameplate to confirm that the proper unit was shipped. Available power supply must be compatible with electrical characteristics specified on component nameplates.

Installation

General Information

This manual covers the installation, operation and maintenance of the Trane Chilled Water Blower coil Air Handlers. BDHB and BDVB completely designed to incorporate a single slab coil assembly, improved application flexibility, servicing and maintenance accessibility and an improved accessory line.

BDH/VB are factory convertible type (vertical or horizontal) they are shipped in vertical position.

Note:

"Warnings" and "Cautions" appear at appropriate places in this manual. Your personal safety and the proper operation of this machine require that you follow them carefully. The manufacturer assumes no liability for installations or servicing performed by unqualified personnel.

Handling

The unit will be supplied with a shipping based and protective packaging over the unit casing. The packaging should be kept on the unit during handling or storage on site.

If it is necessary to remove the packaging for inspection prior to completion of on site handling, retain packaging parts and reapply them by tapping in position to prevent damage to the casing. The unit as supplied has a shipping base which is suitable for handling by a fork lift truck.

BDH(V)B
Model Nomenclature

Digit 1,2	B D	BLOWER COIL UNIT, BELT-DRIVEN, Cooling Only
Digit 3	H	Airflow Configuration H = Horizontal Discharge V = Vertical Discharge
Digit 4	B	Development Sequence, B = Second
Digit 5,6,7	0 4 8	Nominal Capacity, Airflow [CFM] 048 = 4800 065 = 6500 080 = 8000
Digit 8	G	Installed Motor kW G = 2.2 H = 3.0 J = 4.0 K = 5.5
Digit 9	0	Electrical rating / Utilization Range : Volt / Phase / Hz. D = 380-415V / 3Ph / 50Hz K = 380V / 3Ph / 60Hz 3 = 230V / 3Ph / 60Hz 4 = 460V / 3Ph / 60Hz S = SPECIAL
Digit 10	1	Chilled Water Coil 1 = 3 Row / RH Connection 2 = 3 Row / LH Connection 3 = 4 Row / RH Connection 4 = 4 Row / LH Connection
Digit 11	0	Future Use
Digit 12	A	Factory Installed Option A = 1” Filter (Standard) B = 2” Washable Filter C = Discharge Plenum c/w Louver (Applicable on BDV - Series Only) D = 2” Washable Filter & Discharge Plenum c/w Louver
Digit 13	0	Future Use
Digit 14	A	Minor Design Sequnce A = First
Digit 15	A	Service Indicator

	MOTOR SIZE		FAN
MODEL	STANDARD	OVERSIZE	SIZE
BDH/V B 048	G = 2.2kW	J = 4.0kW	KAT 15s
BDH/V B 065	H = 3.0kW	K = 5.5kW	KAT 18s
BDH/V B 080	J = 4.0kW	K = 5.5kW	KAT 18s

General Specifications
BDHB / BDVB

Model			BDH(V)B 048	BDH(V)B 065	BDH(V)B 080
Nom. Airflow		CFM	4800	6500	8000
		CMH	8156	11045	13594
Cooling Coil					
Coil Face Area		Sq. ft (m^2)	10.22 (0.95)	15.0 (1.39)	15.0 (1.39)
3 Row		Row/FPI	3 /12		
	Total Capacity	MBH(kW)	161.3 (47.26)	231 (67.68)	261.9 (76.74)
	WFR	GPM (L/S)	32.14 (2.03)	46.03 (2.90)	52.18 (3.29)
	WPD	ft. wg (kPa)	16.21 (48.44)	22.36 (66.81)	27.84 (83.19)
4 Row		Row/FPI	4 / 12		
	Total Capacity	MBH(kW)	197.2 (57.78)	279.0 (81.75)	320.5 (93.91)
	WFR	GPM (L/S)	39.30 (2.48)	55.59 (3.51)	63.87 (4.03)
	WPD	ft. wg (kPa)	30.75 (91.88)	43.61 (130.31)	55.46 (165.71)
Fins Material			Aluminium		
Header Material			Copper With Threaded Steel Connector (External)		
Tube Size (OD) in (mm)			3/8" (9.525)		
Header Diameter (OD)		in (mm)	1 1/4" (31.75) BSPT Threaded Connection		
Drain Connection Size		in (mm)	1 1/2" (38.10) BSPT Steel		
Fan					
Drive Type			Belt Drive - Constant Speed		
Fan Type			Centrifugal Forward Curved Fan		
Fan Size			KAT 15-15	KAT 18-18	KAT 18-18
No. of Fans			1	1	1
Motor kW / FanSpeed@**ESP 187 Pa		kW / rpm	2.2 / 901	3.0 / 823	4.0 / 833
(0.75"wg **ESP incl. 1" filter & 3 row					
Motor Type			4 Poles - TEFC, IP55, Class F insulation		
Power Supply			380-415V / 3ph / 50Hz 60Hz Motor - Special Option		
Motor Size Standard / Hi Static Motor		kW	2.2 / 4.0	3.0 / 5.5	4.0 / 5.5
FLA[(2)] Std / Hi Static		Amp (A)	5.16 / 8.80	6.78 / 11.7	8.80 / 11.7
LRA[(2)] Std / Hi Static		Amp (A)	35.09 / 56.32	48.14 / 81.9	56.32 / 81.9
Filter Type			1" Washable Filters		
Quantity - Size in			2-20" x 25"	2-20" x 20"	2-20" x 20"
				1-20" x 25"	1-20" x 25"
Approx Operating Weight		kg	270	320	320
Unit Dimensions : H x W x L		mm	1423 x 1438 x 702	1546 x 1755 x 772	1546 x 1755 x 772

Note:

1. Cooling Coil performances are rated at 26.7°C (80°F) EDB,19.4°C (67°F) EWB and nominal airflow listed (6.67°C EWT / 12.22°C LWT).
2. Motor current rated as per 380V / 3Ph / 50Hz.
3. Basic unit includes belt-drive fan motor, cooling coil and 1" washable filters.
4. Please refer to the product catalog for more details on unit dimension.

Unit Installation

WARNING: OPEN AND LOCK UNIT DISCONNECT TO PREVENT INJURY OR DEATH FROM ELECTRIC SHOCK OR CONTACT WITH MOVING PARTS BEFORE ATTEMPTING ANY INSTALLATION OR MAINTENANCE

The general location of the air handler is normally selected by the architect, contractor, and/or buyer. for proper installation, the following items must be considered.

1. Available power supply must agree with electrical data on component nameplate.
2. If external accessories are installed on the unit, additional clearances must be provided.
3. All ductwork should be properly insulated to prevent condensation and heat loss.

Note: It is recommended that the outline drawings should be studied and dimensions properly noted and checked against selected installation site.

Important: If adding external accessories to the unit, additional clearances must be considered for the overall space needed.

Lifting Recommendations

Before Preparing the unit for lifting, the center of gravity should be determined for lifting safety. Because of the placement of internal components, the unit weight may be unevenly distributed. The unit can be moved using a forklift of suitable capacity. For lifting the unit into an elevated mounting position, run lifting straps or slings under the unit and attached securely to the lifting device. Use spreader bars to protect the unit casing from damage. Test lifts the unit to determine proper balance and stability.

Caution: Use spreader bars to prevent straps from damaging the unit. Install the bars between lifting straps, both underneath the unit and above the unit. This will prevent the straps from crushing the unit cabinet or damaging the unit finish.

All units must be mounted level to assure proper drainage and operation.

Unit Suspension - Typical

If the unit will be suspended, use a suspension mouting kit to isolate the unit from structure. This is usually accomplished through the use of spring or rubber isolators, which are to be furnished by the installer.

To install the suspension rods, check each of the following before mounting the unit.

(a) Space Requirement And Clearances

To allow adequate space for the unit and free air or service clearances. See figure 3.

BDHB is applicable for horizontal application only.

WARNING: ON SITE LIFTING EQUIPMENT MUST BE CAPABLE OF LIFTING THE WEIGHT OF THE UNIT WITH AN ADEQUATE SAFETY FACTOR. THE USE OF UNDER-CAPACITY LIFTING DEVICES MAY RESULT IN PERSONAL INJURY OR DEATH AND CAUSE DAMAGE TO THE UNIT.

Figure 2
Hanging Unit

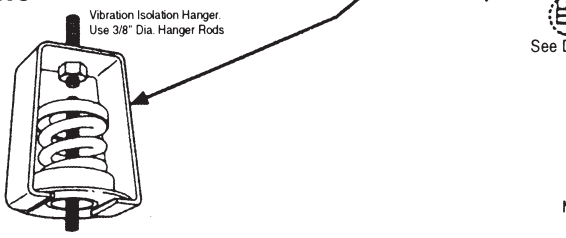
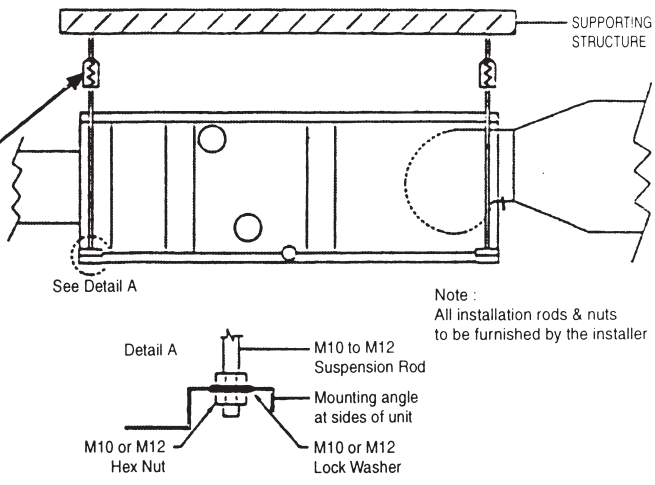


Figure 1 Typical Installation For BDHB Method 1



Unit Installation

Suspend the unit using the factory provided mounting base or holes. This is usually accomplished through the use of spring or rubber isolators, which are to be furnished by the installer.

For servicing and routine maintenance, provide access to the unit through removable panels in the ceiling.

(b) Location, Mounting And Positioning

Before installing any unit make sure proper preparation has been made at each unit location for piping and electrical connections.

Check that the supporting structure is strong enough to support unit weights.

Suspend the unit using the factory-provided threaded mounting holes on top of the unit for BDHV or lifting lugs for BDH/V. See Dimensional Data Section for mounting holes or lifting lugs location.

Caution: For BDVB, before hanging the unit on suspension rods, reinforce the cabinet around the knockouts, using a large washer inside the cabinet. Washers should be between the skin of the air handler and the nut on the suspension rod.

Align the mounting holes of BDH/V with structure support and secure suspension rods to the structure, then to the air handler cabinet. If the mounting holes locations do not permit proper alignment with existing structure, it may be necessary to field fabricate cross members on existing structural beams.

Suitable hanging type vibration isolators (see figure 2 on page 9) may be used in conjunction with flexible duct connrctors to further limit vibration transmission on critical applications.

Vertical Floor (BDVB only)

It is generally recommended that the unit be mounted on the sub - base so that adequate height can be provided for condensate drain trap. However, if adequate drainage can be provided, the unit may be mounted directly on the floor. It is recommended that either a polyurethane or thin rubber gasket be applied to the unit base to prevent paint damage and subsequent corrosion. Before installing any unit make sure proper preparation has been made at each unit location for piping and electrical connections.

Allow adequate space for the unit and free air or service clearances. Refer to Dimension Data Section (for general unit dimension).

All BDVB can be installed back to the wall. Service clearance required is 1m at both left and right hand sides of BDVB. 1m in front of the coil is minimum recommended airflow clearance.

Vertical Sub - base (BDVB only)

An accessory sub - base is available for vertical floor mount configuration, wihich will increase the height of the unit by 152 mm. It also allows for condensate drain trapping.

Water Pipe Connections

The Water coils for the BDH/V series units have been designed with 3/8" (34.93 mm)OD copper tubes and W3BS aluminium fins. The copper headers are fitted with 43mm (1-1/4") BSPT steel adapter for ease of connection.

Unit Installation

Warning: Care must be taken when connecting pipework to the coil headers. The header will not withstand the torque necessary for a watertight joint. Always support the coil connection with a suitable wrench when connecting pipework to the unit.

Condensate protection for chilled water headers, valves and piping must be provided by installer.

Condensate Drain Connections

These air handlers come with standard drain pan. 38mm diameter drain connections are provided on the unit sides as required. U-Trap must be applied to avoid water being sucked back. See Figure 4

Auxiliary Drain Pan

A field fabricated auxiliary drain pan may be installed under the unit, and when condensate overflow may cause damage. This drain pan will eliminate any excess condensation that may be due to extreme humidity or an obstructed drain in the primary drain pan. Drain lines from this pan must be installed, but should not be connected to the primary drain line from the unit.

Isolate the auxiliary drain pan from both the air handler and the structure.

Filters

Air handlers are shippen with 1" washable filters installed in the unit, 2"or 4" high efficiency secondary filter (BDVB) as an option. For filter dimensions, refer to General specification. Filters shall be accessible from the side coil access panel.

Duct Connections

The supply and return ducts should be connected to the unit with flame retardant duct connectors and the use of flexible connectors field supplied is recommended for all duct connections in order to reduce vibration transmission. See figure 5.

The retum duct should be sized to the same dimensions as the return inlet of the unit.

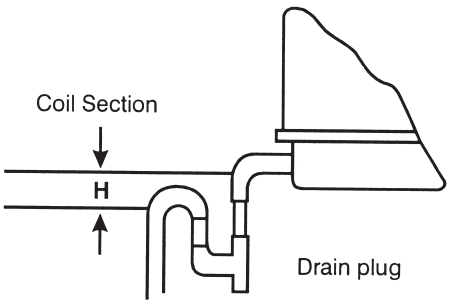
Electrical connection

All electrical lines, sizing, protection and grounding must be in accordance with the National Electric code and local codes.

1. If conduit is used, isolate whenever vibration transmission may cause a noise problem within the building structure.
2. Ensure all connections are tight and no wires exposed.
3. All accessories must be installed and wired according to the instructions packaged with that accessory.

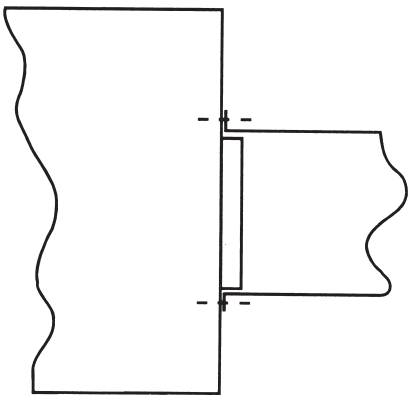
WARNING: WHEN INSTALLING OR SERVICING THIS EQUIPMENT, ALWAYS EXERCISE BASIC POSSIBILITY OF ELECTRIC SHOCK THAT COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

Figure 4 - Condensate Drain Evacuation U-Trap



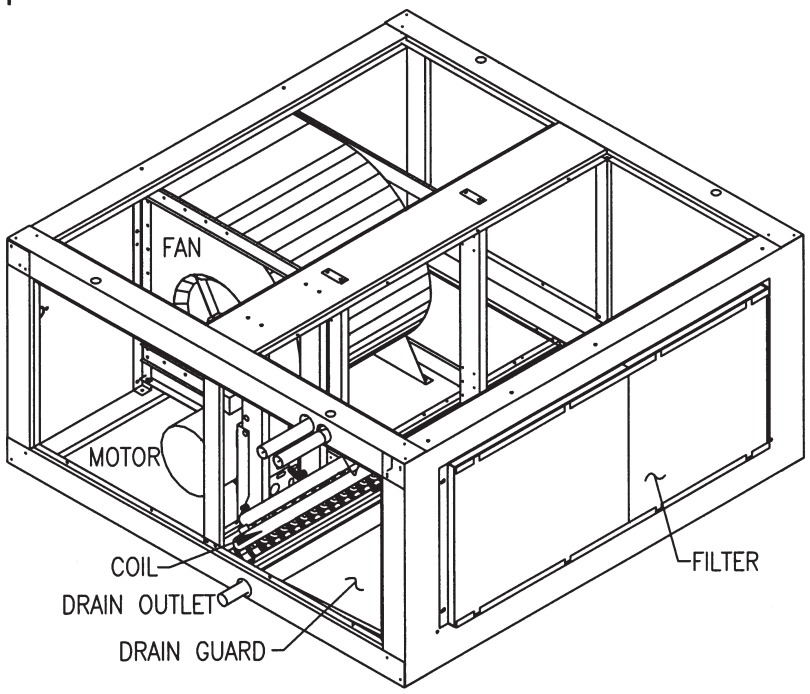
'H, This dimension must be 15 mm at least plus total static pressure.

Figure 5 - Duct Connection

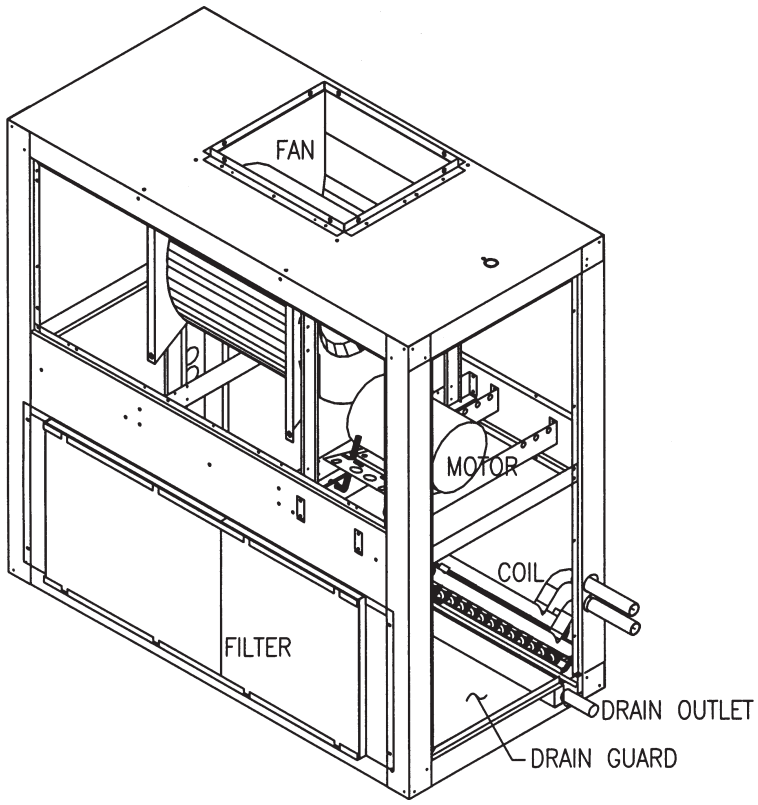


Unit Configuration

HORIZONTAL UNIT



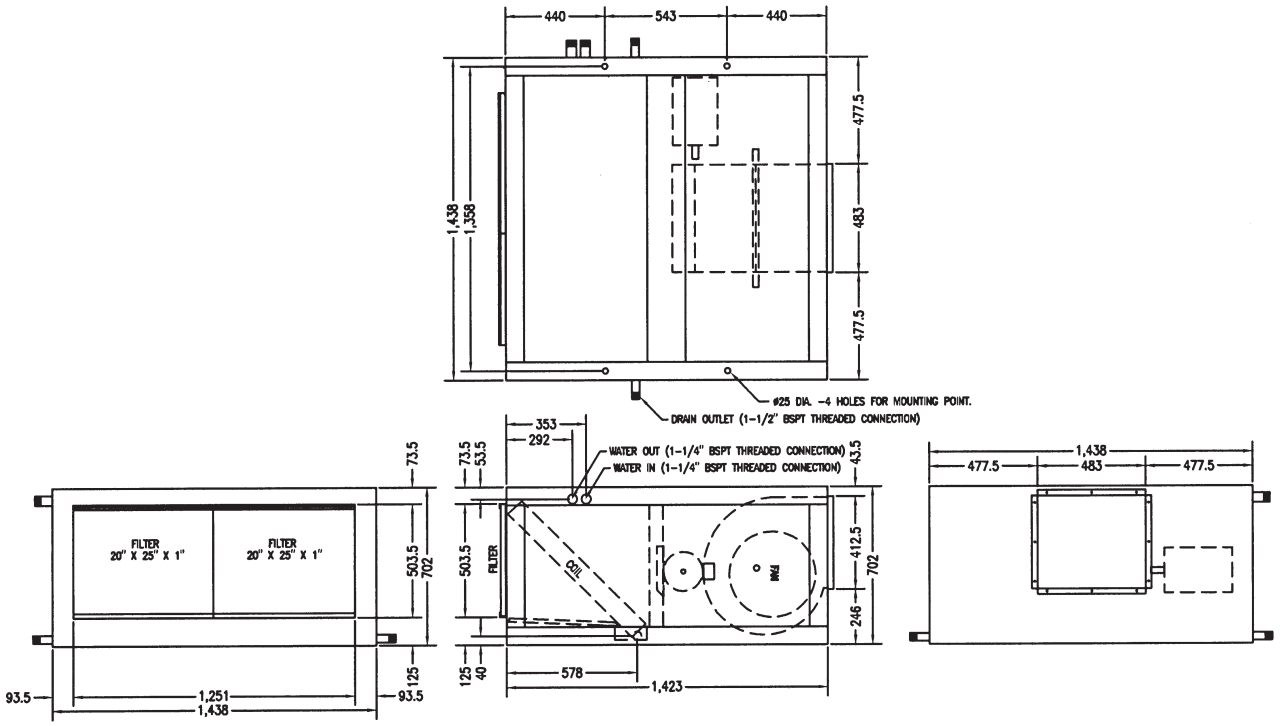
VERTICAL UNIT



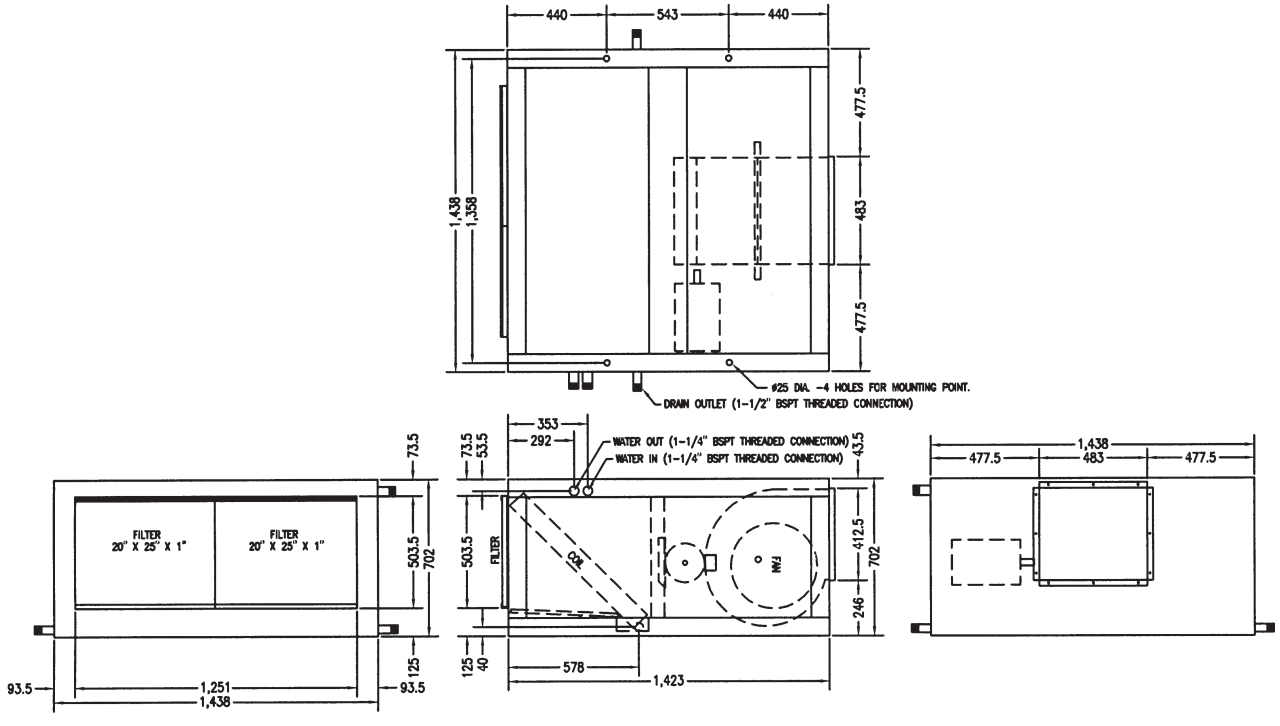
Dimension Data

BDHB 48 - HDT

(Right Hand Connection)



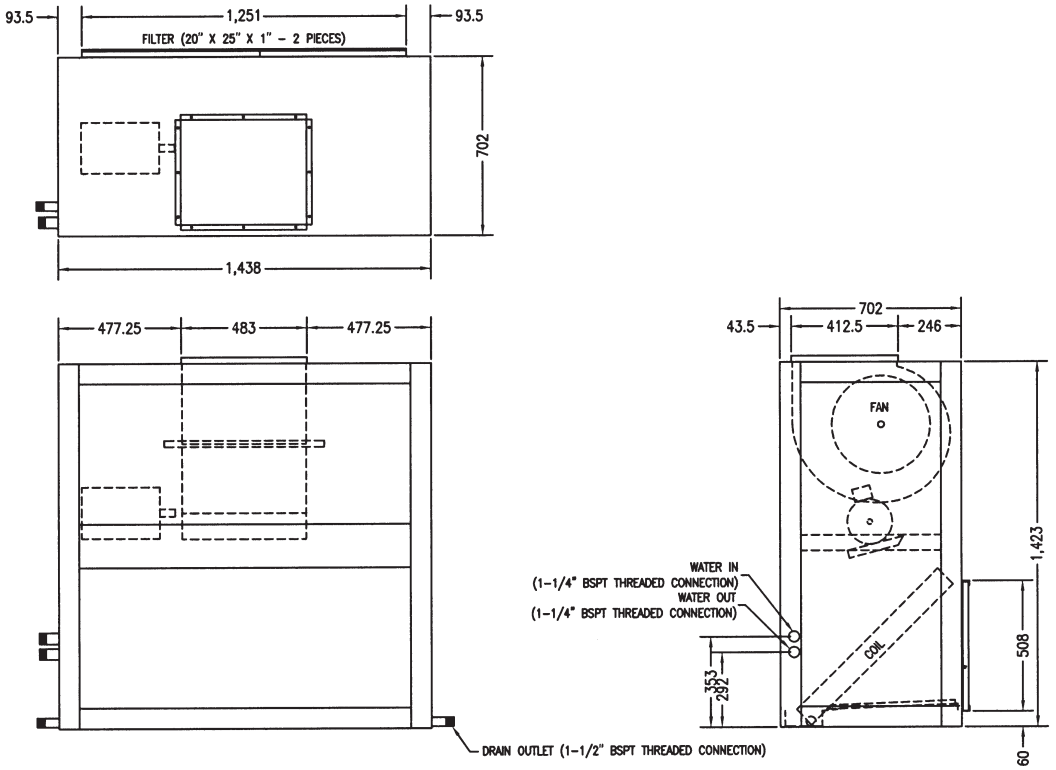
(Left Hand Connection)



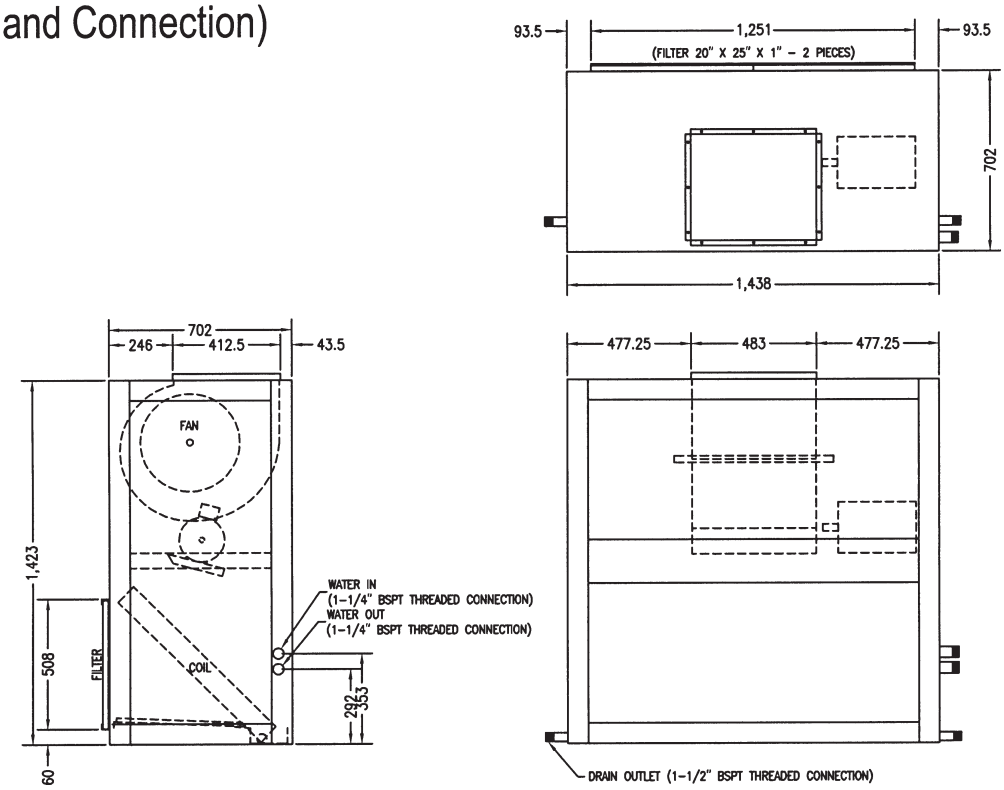
Dimension Data

BDVB 48 - VDT

(Right Hand Connection)



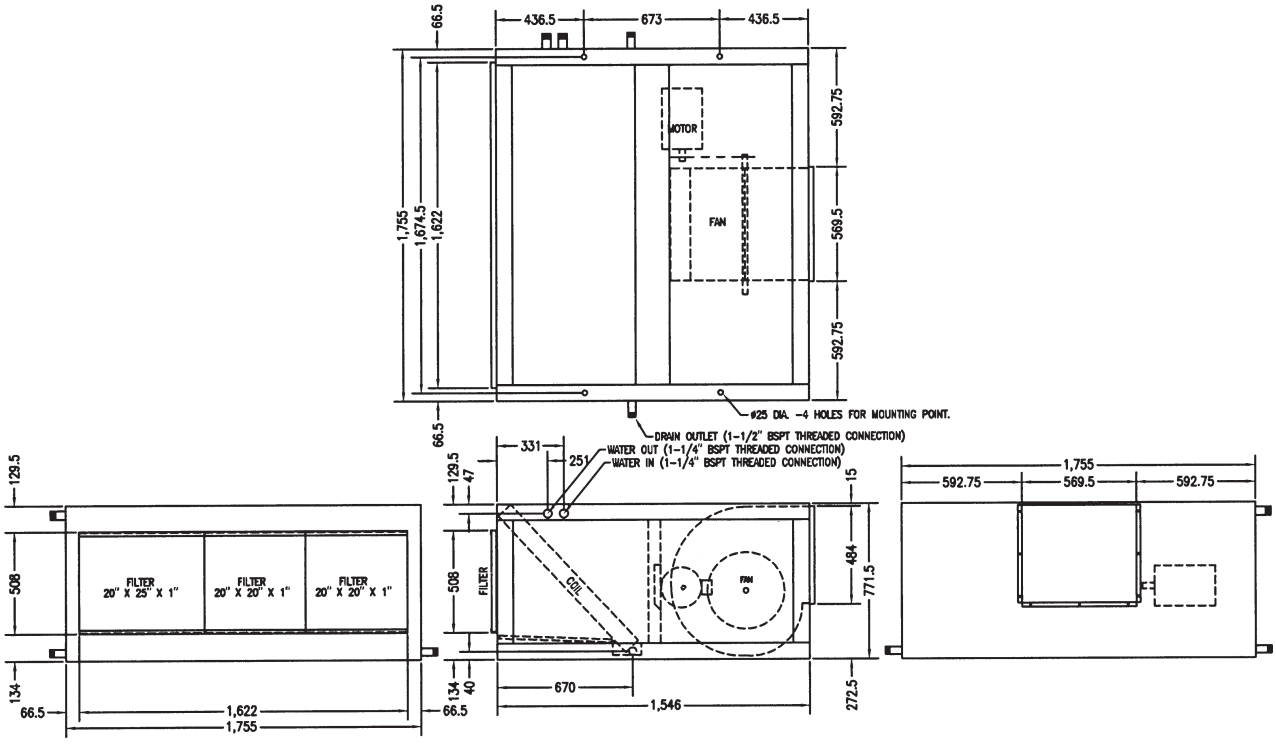
(Left Hand Connection)



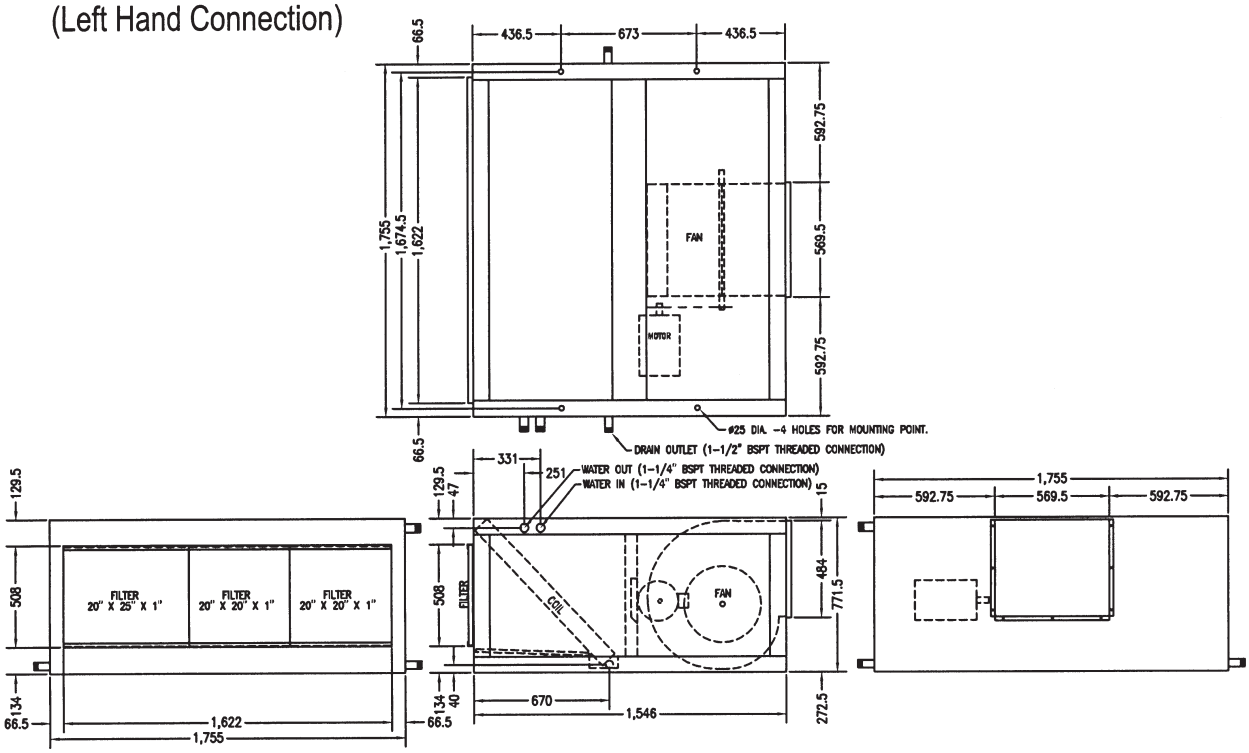
Dimension Data

BDHB 65/80 - HDT

(Right Hand Connection)



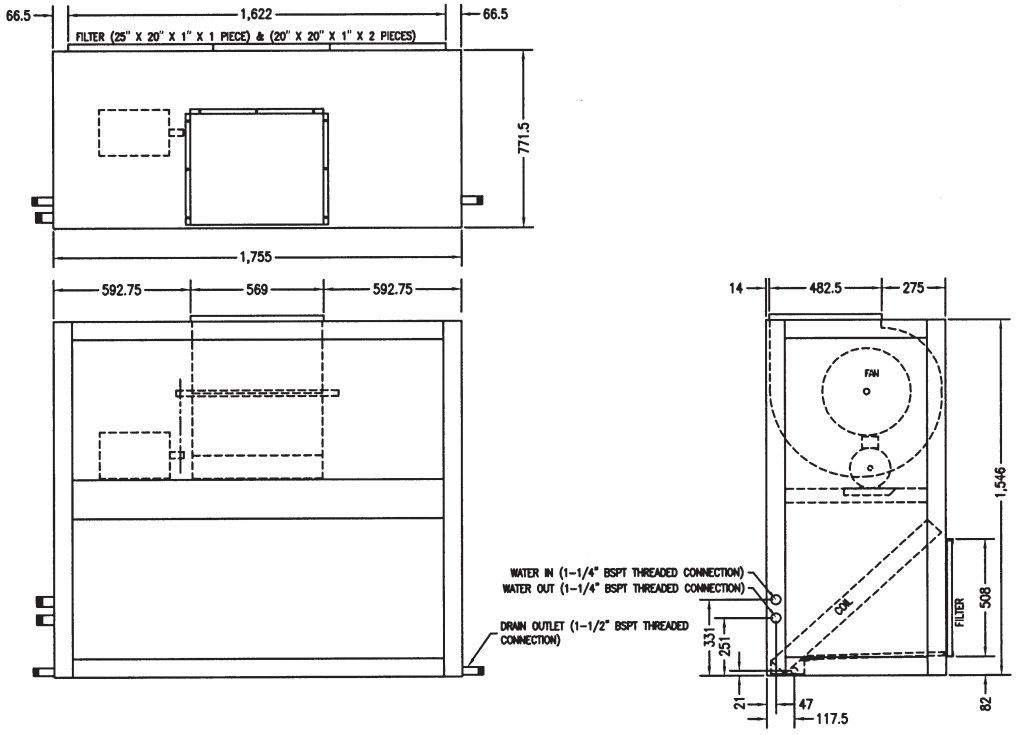
(Left Hand Connection)



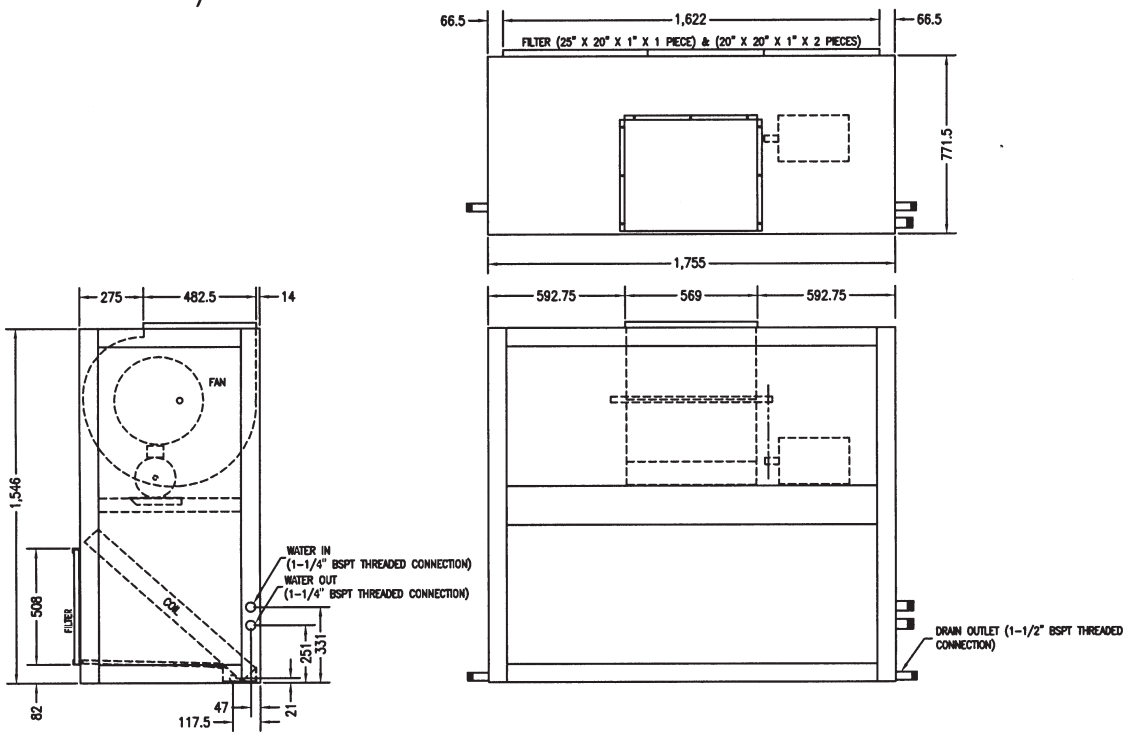
Dimension Data

BDVB 65/80 - VDT

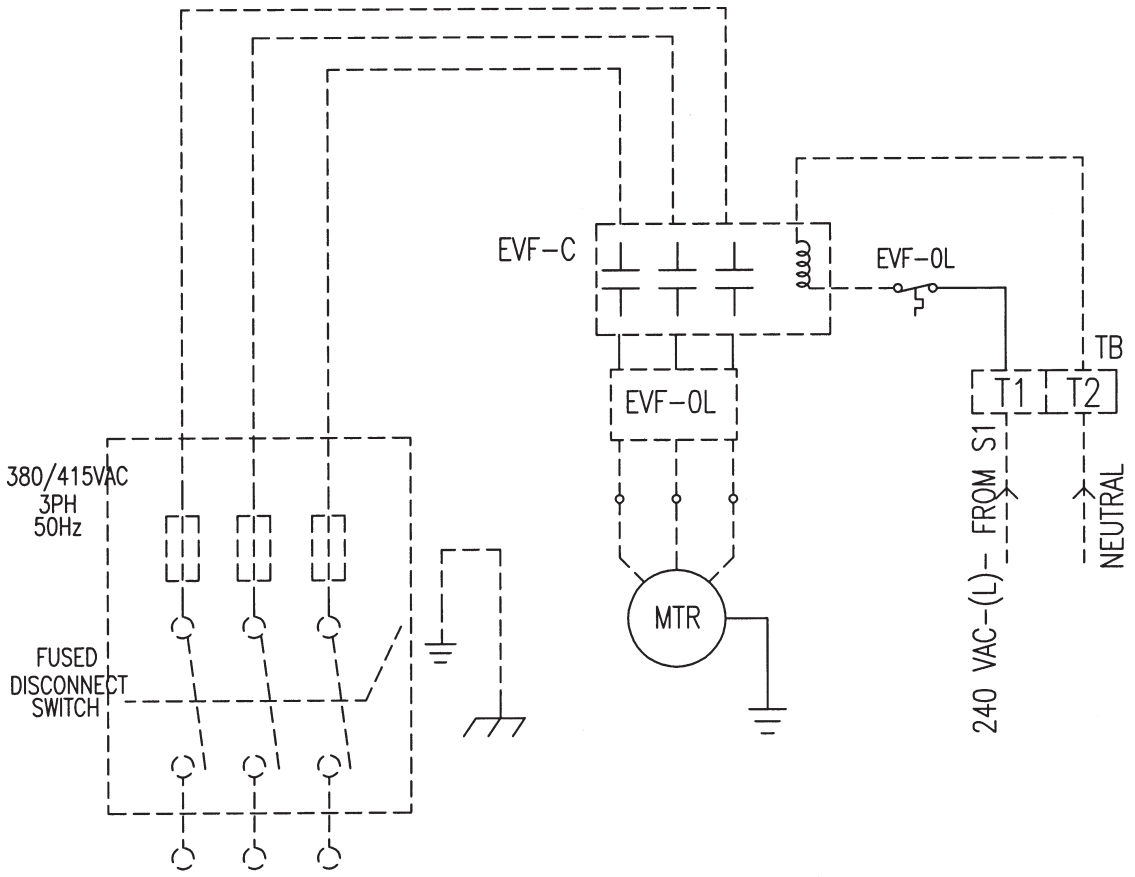
(Right Hand Connection)



(Left Hand Connection)



BD - Series Wiring Diagram



SEE NAME PLATE FOR
LINE VOLTAGES

⚠ WARNING

HAZARDOUS VOLTAGE!

DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING.

FAILURE TO DISCONNECT POWER BEFORE SERVICING CAN CAUSE SEVERE PERSONAL INJURY OR DEATH.

IMPORTANT

USE COPPER CONDUCTORS ONLY TO PREVENT EQUIPMENT DAMAGE. UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT ANY OTHER WIRING.

LEGEND	
DEVICE DESIGNATION	DESCRIPTION
MTR	FAN MOTOR
EVF-C	EVAP. FAN CONTACTOR.
TB	TERMINAL BLOCK
L1,L2,L3	LINE VOLTAGES
EVF-OL	EVAP. FAN O/LOAD.
S1	SYSTEM SWITCH.

NOTES:

1 DASHED LINES INDICATE RECOMMENDED FIELD WIRING BY OTHERS. DASHED LINE ENCLOSURES AND/OR DASHED DEVICE OUTLINES INDICATE COMPONENTS PROVIDED BY THE FIELD. PHANTOM LINE ENCLOSURES INDICATE ALTERNATE CIRCUITRY OR AVAILABLE SALES OPTIONS. SOLID LINE INDICATES FACTORY WIRING.

Operation / Start-Up

Pre-Start-Up Inspection

Perform the following checks and inspections before operating the unit.

Inspection Checklist

- ☐ a)Unit is mounted securely to the ceiling support rods (mounting units).
- ☐ b)Ductwork connections are complete, valve and piping have thoroughly insulates.
- ☐ c)Coil connections are complete and tight.
- ☐ d)Condensate drain pan connections are complete and tight.
- ☐ e)Electrical connections completed. Wiring is correct and in accordance with the wiring diagram. Ground connection completed.
- ☐ f)Check and retighten, if necessary all the motor, fan pulley, fan bearings and wheel.
- ☐ g)Rotate fan by hand, to ensure that is runs freely and that there is no interference.
- ☐ h)Check and retighten, if necessary, drive and bearing bolts, motor clamp plate bolts and isolator bolt.
- ☐ i)Check to ensure that pulley is correctly aligned and that shaft is parallel.
- ☐ j)Check belt tension as per instruction given in the maintenance section.

Start-Up procedures

After completing all items under "Pre-Start-Up", the unit may be started and the following checks and adjustments performed:

- ☐ a)Measure the motor voltage and amps on all phases to insure proper operation.
  Compare these reading with the motor nameplate.

- ☐ b)Disconnect load and start motor to check the direction of rotation. If the rotation need to be changed, stop the motor completely and change the direction of rotation by changing the line connection.

- ☐ c)After connecting the load, the motor should start quickly and run smoothly. If it does not, the power supply should be switched off at once and all connections, as well as the power supply, should be re-checked before re-starting.

- ☐ d)In the event of excessive vibration or unusual noises, the motor should be disconnected from the load and checked for poor alignment, loose mounting bolts, etc.

- ☐ e)When the motor has been operated under load for a short period of time, check that the operating current with the nameplate current.

Maintenance

WARNING: WHEN INSTALLING OR SERVICING THIS EQUIPMENT, ALWAYS EXERCISE BASIC SAFETY PRECAUTIONS TO AVOID THE POSSIBILITY OF ELECTRIC SHOCK THAT COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

Monthly Inspection

1Check condition of air filters and replace them if necessary.

2.Check the drain pan to be sure that it is clean and free to carry the flow of condensate through the drain line.

3.Check the coil surface for cleanliness. Clean if necessary.

Yearly Inspection

1.Replace filters.

2.Check coil surface, clean by vacuuming or flushing with cold water. Do not use steam or hot water.

3.Carry out check (g) through (j) as detailed in inspection chelist in the Operation Section.

4.Inspect the condition of the fan belt and replace if necessary.
The belts fitted to units cannot achive design performance without the correct tensioning.See figure 6.

5.Check condition of vibration isolators, replace if there is any sign of wear, loosening or material deterioration.

6.Check fan bearings for noisy operation and excessive lubricant leakage. Replace if necessary.

7.Inspect the condensate drain pan and condensate piping to make sure they are clear and will carry away all water.

8.Inspect the control panel wiring to make sure connections are tight and insulation is intact.

9.Check system for water leaks.

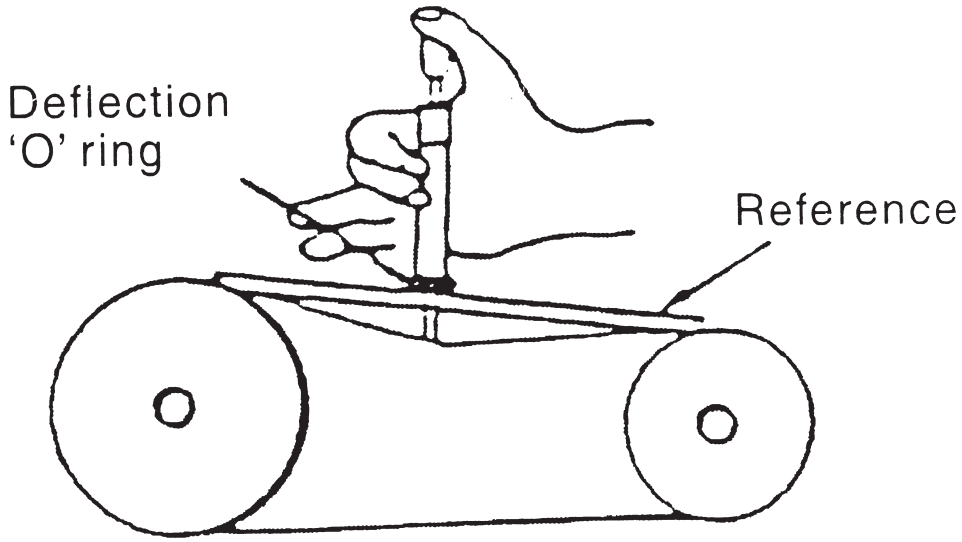
Change / Clean Filters

Change or clean air filters at least twice a year. Filters will require more frequent care under high load conditions or dirty air. A clogged air filters reduces airflow, cooling capacity and increases energy usage.

To clean washable filters, remove the filter media and wash it in water to remove dust, dirt and lint; allow to dry thoroughly before re-installing in the units. Do not rub or wring.

Washable filters can also be cleaned by blowing with compressed air in opposite direction of filter airflow.
High efficiency secondary filter can't be washed and must be replaced when it is dirty.

Figure 6



Maintenance

It is important that belts are maintained at the correct tension to avoid premature bearing failure and unnecessary belt wear. There are two methods of checking belt tension.

a)The increase in belt length when it is stretched can be measured. The increase under tension should be from 0.6% for a small unit with continuous running, to 1.0% for large units with irregular motor torque.

b)Using a proprietary instrument such as the browning belt tension checker.

Belt Maintenance

Clean fan belts and pulleys with a dry cloth. Oil and grease must be kept off belts. The use of a belt dressing is not recommended. Where replacing belts, use a matched set. Do not force belts onto pulleys, but adjust motor position to allow mounting and then re-tighten.

Pulley Alignment

This is checked by means of a straight edge, which should touch both edges of both pulleys at the same time.

Sheave Alignment

To prevent interference of the fan frame with the belt, make sure that the belt edge closest to the motor has the proper clearance from the fan frame, as shown in Figure 7.

Align the fan and motor sheaves by using a straightedge as shown in Figure 8. The straightedge must be long enough to span the distance between the outside edges of the sheaves.

When the sheaves are aligned, the straightedge will touch both sheaves at points A throught D. A string, drawin tight may be used in the same manner. For uneven width sheaves, place a string in the center groove of both sheaves and pull tight. Adjust sheaves and tighten the sheave set screws to the proper torques, given in Table 2.

Table 2
Recommended Torques for Tightening Sheaves and Bearing Thrust Collar

Torque for Tightening Sheave Setcrews			Torque for Tightening Bearing Thrust Collar			Torque for Tightening Fan Wheel Setscrews		
Inch Lbs.	Foot Lbs.	N-m	Inch Lbs.	Foot Lbs.	N-m	Inch Lbs.	Foot Lbs.	N-m
144	12	16.3	66	5.5	7.5	144	12	16.3

Figure 7
Clearance

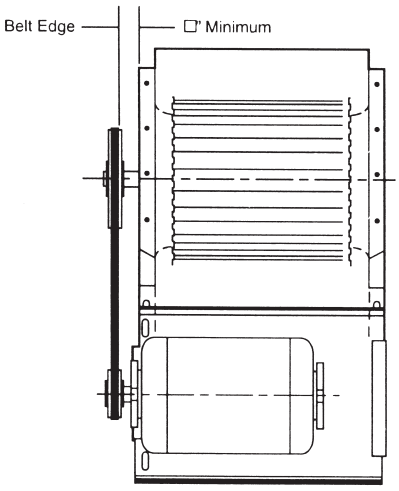
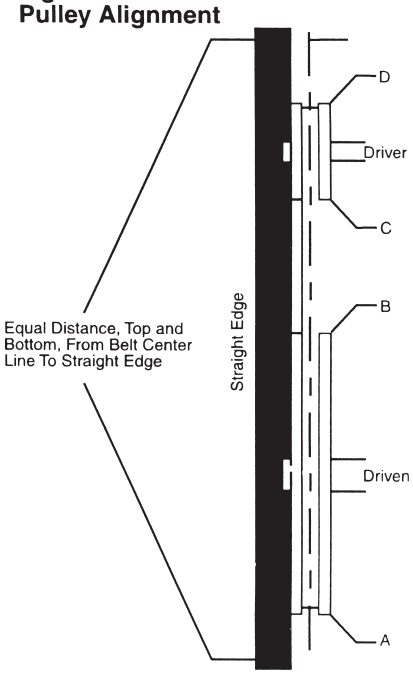


Figure 8
Pulley Alignment



Maintenance

Maintenance Contract Training

It is strongly recommended that you sign a maintenance contract with your local Service Agency. This contract provides regular maintenance of your installation by a specialist in our equipment.
Regular maintenance ensures that any malfunction is detected and corrected in good time and minimizes the possibility that serious damage will occur. Finally, regular maintenance ensures the maximum operating life of your equipment. We would remind you that failure to respect these installation and maintenance instructions might result in immediate cancellation of the warranty.

The equipment described in this manual is the result of many years of research and continuous development.

To assist you in obtaining the best use of it, and maintaining it in perfect operating condition over a long period of time, the constructor have at your sisposal a refrigeration and air conditioning service school. The principal aim of this is to give operators and maintenance technicians a better knowledge of the equipment they are using, or that is under their charge.

Emphasis is particularly given to the importance of periodic checks on the unit operating parameters as well as on preventative maintenance, which reduces the cost of owning the unit by avoiding serious and costly breakdown.

Trouble Analysis

Use the tables in this section to assist in identifying the cause of causes of a malfunction in BD Series operation. The column header RECOMMENDED ACTION will suggest repair procedures.

Note: These Tables are intended as a diagnostic aid only. For detailed repair procedures, contact your local Trane Service Company.

Warning: Disconnect electrical power source and allow all rotating equipment to stop completely before inspecting or servicing the unit. Failure to do so may result in personal injury or death from electrical shock or moving parts.

Warning: Disconnect electrical power prior to access into a fan ductwork. Even when locked out electrically, fans may cause injury or damage if the impeller is subject to "windmilling". The impeller should be secured to physically restrict rotational movement. Failure To secure impeller can cause severe personal injury or death.

BD Series
Trouble Analysis

Symptom	Probable cause	Recommended Action
Bearing is excessively hot	First Start After relubrication. (grease distribution) Over-lubrication,	Allow mechine to cool down and restart. Clean Surface of grease and purge.
	Over tensioned belts.	Tension belts.
	No lubricant.	Apply lubricant. Check bearings for damage.
	Misaligned bearing.	Correct alignment. Check shaft level.
Motor falls to start	Blown fuse or open circuit breaker.	Replace fuse or reset circuit breaker.
	Overload trip.	Check and reset overload.
	Inproper wiring or connections.	Check wiring with diagram supplied on unit.
	Improper current supply.	Compare actual supply power with motor nameplate recommendations. Contact power company for adjustments.
	Mechanical failure.	Check that motor and driave rotate freely. Check bearing lubricant.
Motor stalls	Open phase.	Check line for an open phase.
	Overloaded motor.	Reduce load or replace with larger motor.
	Low line voltage.	Check across AC line. Correct voltage if possible
Excessive vibration	Poor alignment.	Align bearing set screws. Loosen and retighten bearing set screws.
	Shipping spacers not removed.	Remove shipping spacers and/ or bolts.
	Over tensioned belts	Adjust belts tension.
	Misaligned drive	Align drive.
Motor runs and then dies down	Partial loss of line voltage.	Check for loose connections. Determine adequacy of main power supply.
	Stator shorts when motor warms up.	Replace stator.
Motor does not come up to speed.	Low voltage at motor terminals.	Check across AC line and correct voltage loss if possible.
	Line wiring to motor too small.	Replace with larger sized wiring.
Motor overheats	Overloaded motor.	Reduce load or replace with a larger motor.
	Motor fan is clogged with dirt preventing proper ventilation.	Remove fan cover, clean fan and replace cover.

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BD Series
Trouble Analysis

Symptom	Probable cause	Recommended Action
Excessive motor noise.	Motor mounting bolts loose.	Tighten motor mouting bolts.
	Rigid coupling connections.	Replace with flexible connections.
	Worn motor bearings.	Replace bearing and seals.
	Fan rubbing on fan cover.	Remove interference in motor fan housing.
Rapid motor bearing wear	Excessive overhung load due to overtensioned drive.	Check belt tension and overhung load.
	Excessive overhung load due to a small diameter motor sheave.	Replace sheave with larger one.
Loose fan belt	Motor is poorly positioned.	Adjust belt tension.
	Worn or damaged belt.	Replace belt or belt set. Check sheave alignment.
	Worn sheaves.	Replace sheaves.
Short belt Life	Worn sheaves.	Replace sheaves.
	Misaligned belt.	Realign drive with MVP sheave set at mean pitch diameter.
	Grease or oil on belts.	Check for leaky bearings. Clean belts and sheaves.
	Belt slipping.	Adjust tension.
	Belts rubbing.	Remove obstruction or realign drive for clearance.
Bearing Noise	Poor alignment.	Loosen bearing set screws and re-align.
	Inadequate lubrication.	Grease bearing(s).
Low coil capacity (Chilled Water)	Air is bypassing coil.	Prevent bypass with blockoffs.
	Coil tubes are blocked.	Clean and unblock tubes.
	Incorrect airflow.	Check fan-operating conditions.
	Incorrect gpm.	Check water pumps, valves and lines for obstructions.
	Incorrect water temperature.	Provide proper water temperature.
Under CFM or low air flow	Belt loose	Adjust belt tension or clean belt if it is greasy.
	Duct leakages	Check duct joining or turning.
	Duct obstruction or too small causing high static	Increase fan rpm to overcome high static but fan and motor working limitations must be considered.
	Dirty filter or coil	Change filter and clean coil.
Over cfm or high air flow	Low static due to oversize duct or duct work too short	Replace pulley to reduce fan rpm to meet requirement.
Water leaking	Drain pipe choked	Clear drain pipe.
	Improper or no U-trap	Ensure U-trap installed properly.
	Water carry over due to high velocity	Replace pulley to reduce fan rpm.

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For more information, contact your local district office

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Trane has a policy of continuous product and product data improvement and reserves the right to charge design and specifications without notice. Only qualified technicians should perform the installation and servicing of equipment referred to in this publication.